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09/475,614	12/30/1999	Gilbert Wolrich	P7876	6580
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INTEL CORPORATION				
c/o CPA Global				
P.O. BOX 52050				
MINNEAPOLIS, MN 55402				
EXAMINER				
ENG, DAVID Y				
ART UNIT		PAPER NUMBER		
2455				
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07/21/2011		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

09/475,614

Applicant(s)

WOLRICH ET AL.

Examiner

DAVID ENG

Art Unit

2455

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 45-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 45-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-896)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s) Mail Date _____

DETAILED ACTION

Claims 1-44 have been cancelled. Newly submitted claims 45-60 have been entered. Claims 45-60 are pending with 45 and 53 being independent claims.

Abstract

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The present abstract has more than 150 words (186) and is too long.

Claim Rejections - 35 USC § 112, 2nd paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 45-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to independent claims 45 and 53, the recitation of the functions of the receive threads (see lines 4-7 of claim 45, for example) are placed in the same paragraph of "assign step" instead of in the paragraph of "process step" (see the last

two lines of claim 45 for example), it is not clear whether or not the step of "process the received network packets with the respective assigned receive threads" is referring to the recitation of the functions of the receive threads in the paragraph of "assign step" (lines 4-7 of claim 45, for example).

The recitation "receive threads provided by multiple programmable processors" in lines 8-9 of claim 45 is vague and indefinite. It is not clear whether the programmable processors are merely for providing the receive threads or are further required to execute the receive threads in addition to merely providing them to the preamble processor. It is not clear whether the processor (the processor recited in the preamble of claim 45, for example) or the multiple programmable processors execute the receive threads so as to implement respectively the functions recited in lines 4-7 of claim 45 and in the last two lines of claim 45. In their remarks submitted on 5/31/2011, Applicants appear to rely on the recitation of the programmable processor for patentability. Applicants are requested to identify the support of their response in the specification. Independent claim 53 has similar defects. Further, see claims 47 and 55, it is not clear which processor provides the threads.

With respect to line 6 of claim 45, it is not clear what is being lookup based on data in the headers of the packets. Claim 53 has similar defect.

Scope of the dependent claims is not clear in that the dependent claims do not further limit the two steps (assigning and processing) recited in the independent claims.

Scope of claim 52 and 60 is not clear.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 45-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allison (USP 6,373,848) in view of Belkin (USP 6,604,125).

Scope of Applicants' claimed invention:

The claims recite a processor 1. for assigning received packets to respective receive threads provided by a plurality of programmable processors and 2. for processing the receive threads so as to enqueue the received packets to respective transmit queues.

Teaching of Allison

See at least the abstract, the summary of the invention in columns 2-3, Figures 1 and 9 and the description thereof and columns 4-9 in Allison. Allison teaches a multi-port adapter having a single Media Access Control (MAC) serving all ports (lines 31-33 of column 2). Figure 1 shows that the single MAC comprises a plurality of ports 0-N (column 3, line 53), a pair of FIFO registers 40 and 43 for receiving data from a plurality of ports, and a multiplexer for selecting one port from a plurality of ports. Figure 9 depicts a flow chart for showing operation of data transfer between selected one of the ports and the host via the MAC. Allison in columns 4-9 further teaches that TxMII (line 53, column 4) and RxMII (line 45, column 6) select one of a plurality of threads to

process the received data dependent on whether the state machine is in IDLE state, DATA state, WAIT state, JAM state or JAM Wait state.

Claims 45 and 53

An article comprising a computer-readable storage medium which stores processor executable instructions, the article comprising instructions which when executed cause a processor (the single Media Access Control MAC) to:

assign received network packets to respective receive threads (Allison's multiplexer selects one of the ports to receive packets therefrom and to select one of a plurality of threads to process the received packets dependent on whether the state machine is in IDLE state, DATA state, WAIT state, JAM state or JAM Wait state), and process the received network packets with the respective assigned receive threads, each of the receive threads to parse respective headers of the respective network packets and perform a lookup based on data in the respective headers of the respective packets and enqueue the respective packets in respective transmit queues (Figure 1 shows that the single MAC comprises a plurality of ports 0-N, a pair of FIFO registers 40 and 43 for receiving data from the plurality of ports) (Figure 9 depicts a flow chart for showing operation of data transfer between selected one of the ports and the FIFO Registers)..

wherein the assigning comprises accessing data associating respective receive threads provided by the respective programmable processors (the secondary reference, Belkins) with respective Ethernet ports;

wherein the plurality of receive threads comprise receive threads provided by multiple programmable processors each having multiple program counters (the Engines 112 shown in Figure 1 of Belkis have program counters) corresponding to respective threads provided by the respective programmable processors,

Combining Allison and Belkin

The Examiner rely on the opinion of the Appeal Board set forth on pages 6-8 of the Decision rendered on 3/28/2011 for combinability.

Claims 46, 47, 54, 55

It is noted that the step of assigning packets to respective threads and the step of to have the threads process the assigned packets (which constitute Applicants' claimed invention) as recited are independent from the function of the threads. Allison teaches assigning different threads for processing received packets dependent on the states of the machine. It would have been obvious to a person of ordinary skill in the art to provide a specific thread to process the assigned packet in a manner as required by the designer. No patentable weight is given to the function of the threads. The invention as claimed is not patentably distinct over the combined references.

Claims 48, 56, 49, 57

The recitations in the claims are independent to the steps of assigning and processing. The recitations are not patentably distinct over the applied references.

Claims 50, 58

There is no recitation as to how the stored status is being used. Further, there is no meaningful value to have the status of the threads stored in a memory. The limitation has no patentable value and is not patentably distinct over the applied reference.

Claims 51, 59

It is well known in computer art that all packets are defined by beginning and end points and accessible by instructions using addresses. No inventive concept or improvement is seen.

Claims 52, 60

There is no recitation as to how the 2-bit message is being used. No patentable weight is given to the recitation. The recitation is not patentably distinct over the applied art.

Response

Applicants state that Allison does not disclose multiple programmable processors to provide multiple receive threads. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Other Cited Reference

Thomas (USP 6,925,637) is cited for the teaching of assigning received packets to threads for processing (see claim 2).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID Y. ENG whose telephone number is 571-272-3984. The examiner can normally be reached on M-F from 8AM to 3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise, can be reached on 571-272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/DAVID Y. ENG/
Primary Examiner, Art Unit 2455